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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/925,700	08/10/2001	Takefumi Sawada	381KA/50302	4247

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EXAMINER

SAN MARTIN, EDGARDO

ART UNIT	PAPER NUMBER
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2837

DATE MAILED: 09/11/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Applicati n No.

09/925,700

Applicant(s)

SAWADA ET AL.

Examiner

Edgardo San Martin

Art Unit

2837

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 13-23 is/are rejected.
- 7) ☒ Claim(s) 2-12 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claim 14 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 14 recites the limitation "said polarity discriminating means" in line 3.

There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 13 – 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakada et al. (JP 2000134976 A) in view of Kaneko et al. (US 5,994,870).

With respect to Claims 1, 15, 22 and 23, Nakada et al. teach a motor control apparatus for controlling a voltage applied to an alternating current (AC) motor using a PWM signal, comprising magnetic position detecting means; and fault detecting means for detecting a fault in an detected magnetic pole position of the AC motor (Fig.1;

Abstract), but fail to disclose the magnetic pole position being estimated by detecting a current of the AC motor.

On the other hand, Kaneko et al. teach a synchronous motor controller comprising a magnetic position estimating means (Fig.1, Item 8a) for detecting a current of the motor to estimate a magnetic pole position of motor (Col.6, Lines 26 - 35).

It would have been obvious to a person with ordinary skill in the art to employ the Kaneko et al. magnetic position estimating means as the Nakada et al. magnetic position detector because the magnetic position estimating means would reduce costs, would simplify the circuit assembly and would increase the reliability of the system by employing less equipment that could malfunction at some point in time.

With respect to Claim 13, Nakada et al. teach wherein the fault detecting means shuts down an associated system when the fault detecting means detects a fault, the fault including oscillation and inversion of an estimated magnetic pole position (Abstract).

With respect to Claim 14, Kaneko et al. teach wherein a polarity discriminating means corrects the polarity to continue a control when a fault detecting means detects a fault (Col.11, Line 47 – Col.13, Line 5).

With respect to Claims 15 and 23, Kaneko et al. teach an electric vehicle equipped with a motor control apparatus that controls the motor based on a detected pole position (Fig.1; Col.2, Line 38 – Col.3, Line 38).

With respect to Claims 16 and 19, Kaneko et al. teach wherein the magnetic position estimating means is operative to estimate the magnetic pole positions without direct detection of the magnetic pole position (Fig.1; Col.6, Lines 26 - 35).

With respect to Claims 17 and 20, Kaneko et al. teach wherein the magnetic position estimating means utilizes calculations in lieu of detection to estimate the magnetic pole position (Fig.1; Col.6, Lines 26 - 35).

With respect to Claims 18 and 21, Kaneko et al. teach wherein the voltage is controlled on the absence of a detector to sense magnetic pole position (Fig.1; Col.6, Lines 26 - 35).

Allowable Subject Matter

3. Claims 2 – 12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

4. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Aso et al. teach a synchronous motor controller.

Contact Information

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edgardo San Martin whose telephone number is (703) 308-1050. The examiner can normally be reached on 8:00AM - 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Nappi can be reached on (703) 308-3370. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3431 for regular communications and (703) 305-3431 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.



Edgardo San Martín
Patent Examiner
Art Unit 2837
Class 318
September 2, 2003